

The $\text{Li}^7(\nu, e^-)\text{Be}^7$ reaction is an attractive possibility. Since the transition is superallowed, and lithium is a light element, the quantity required is rather modest. However, counting Be^7 radioactivity with high sensitivity is rather difficult. There are several techniques that could be applied: (1) count the very low energy Auger electrons (280 eV); (2) count the 480 keV gamma ray that occurs in 11 percent of the decays; or (3) count the recoiling lithium ion (57 eV).¹⁸ The carrier-free chemical separation of beryllium from an aqueous solution of a lithium salt could be accomplished by using a chelating resin, or by the use of a ferric hydroxide scavenger. Hence, if a counting system could be devised to observe a count per day of Be^7 a large scale lithium solar neutrino detector appears to be entirely feasible. Dr. Bahcall has pointed out in this conference that a measurement of the solar neutrino capture rate in Li^7 would be especially valuable for understanding the processes in the sun, particularly if the solar neutrino capture rate in Cl^{37} were observed.

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